

ABSTRACT

A complex polarizer system ("cross-polarizer") including an arrangement of at least three polarizing beam splitting layers P1,P2,P3. P1 and P2 are arranged such that a beam transmitted by P1 is reflected by P2 without further polarization rotating components; P3 is arranged such that a beam reflected by P1 transmits P3 without further polarization rotating components. The congeneric processing of the two sub-beams of a beam split at P1 (both sub-beams go through a transmission and a reflection) eliminates the intrinsic asymmetries of simple polarizers with respect to purity and folding. Coupling of cross-polarizers results in efficient arrangements of systems which operate with complementarily polarized radiation, e.g. 2-channel image display systems with reflective spatial light modulators (e.g. Liquid Crystal on Silicon displays).